BASIC INFORMATION

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Title of Invention:	ADJUSTABLE SUPPORT COLUMN FOR FLOOR PANELS
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ADJUSTABLE SUPPORT COLUMN FOR FLOOR PANELS

BACKGROUND OF THE INVENTION

(Field of the Invention)

The present invention generally relates to adjustable support columns and, more particularly, to the adjustable support columns for supporting panels a controllable distance above a base surface such as, for example, a building floor to permit the panels to form a secondary surface, that is, a secondary floor.

(Description of the Prior Art)

A system of making a secondary floor above a building floor, commercially known as a free-access floor system, is currently offered in the market. The free-access floor system makes use of, inter alia, a plurality of adjustable support columns which serve concurrently as a spacer and as a support leg. The free-access floor system provides people with a free access to and fro within a building without being disturbed and/or annoyed by a jungle of obstructions such as electric wiring and/or plumbing lying on a building floor. The free-access floor system can also be used to conceal the electric wiring and/or plumbing that are laid on a building floor substantial years after completion of the building.

The adjustable support column of a type comprising a base plate adapted to be installed on the base surface, an externally helically threaded pole fixed at a lower end to a center portion of the base plate, and a support pedestal adjustably mounted on the threaded pole and having a top surface for support thereon of the panels, has been well known and is shown in Fig. 17, and the manner of use thereof is shown in Figs. 10 to 13, reference to which will now be made for discussion of the prior art.

Referring first to Fig. 17, the adjustable support column indicated generally by A comprises a base plate 1 of, for example, a generally square configuration adapted to be installed on a support surface, for example, a building floor, an externally threaded pole 4 fixed at a lower end to a center portion of the base plate 1, and a support pedestal 3 adjustably mounted on the externally threaded pole 4 for support of floor panels 2 (Figs. 18 to 21).

The support pedestal 3 includes a generally square mounting plate 3a threadingly mounted on the threaded pole 4, and a support block 3b formed integrally with, or otherwise secured to, the mounting plate 3a. The support block 3b is so cross-shaped, when viewed from top, as to leave four voids 7 that open upwardly and laterally at a location corresponding to four corner regions of the mounting plate 3a. A cushioning sheet 6 of a shape similar to the cross-shape of the support block 3b is laid on a top surface thereof.

The support column A of the above described construction is installed on the building floor at a location aligned with a corner butt joint of, for example, four floor panels 2 at which respective corners of the four floor panels 2 are joined in a common plane, so that respective corner regions of those floor panels 2 can be supported from below by the support column A. Specifically, each of the floor panels 2 includes a surfacing plate 2b and a reinforcement skeleton structure 2a secured to, or otherwise formed integrally, with an undersurface of the surfacing plate 2b. At least four corners of the reinforcement skeleton structure 2a are inwardly depleted in a generally L-shaped pattern to allow the corresponding corners of the surfacing plate 2b to have a generally L-shaped corner fringe 9 protruding outwardly from and relative to the inwardly depleted corners of the reinforcement skeleton structure 2a.

When a secondary floor is desired to be formed a distance, for example, 10 cm, above the building floor to define a space in which electric wiring and/or plumbing can be accommodated between the building floor and the secondary floor, or to conceal the electric wiring and/or plumbing then laid on the building floor, the panels 2 are laid above the building floor with the support columns A supporting the panels 2 from below at respective locations aligned with the corner butt joints each defined by respective one corners of the four panels 2. The panels 2 so laid and supported above the building floor serve as the secondary floor.

The detail of how each support column A supports the panels 2 will be discussed with particular reference to Figs. 18 to 20. Assuming that the support column A is fixedly installed on the building floor, the panel 2 has to be lowered from above, or displaced sidewise, until the inwardly depleted corner of the reinforcement skeleton structure 2a is snugly received within the associated void 7 with the L-shaped corner fringe 9 resting on the support block 3b of the support pedestal 3 through the cushioning sheet 6 as shown in Figs. 18 and 19. A similar procedure is repeated with respect to the remaining three panels 2 to complete the secondary floor substantially as shown in Fig. 19 with side edges of one surfacing plate 2b held in abutment with mating side edge of the next adjoining surfacing plate or plates 2b.

Thus, with the free-access floor system, the secondary floor can be formed a distance above the building floor so that people in an office building can freely walk on the secondary floor without being disturbed and/or annoyed by the presence of obstructions such as electric wiring and/or plumbing lying on the building floor.

However, the free-access floor system utilizing the prior art support columns discussed above has been found having a problem. More specifically, as a result of clumsy installation and/or shocks transmitted from people walking on the secondary floor, one or some of the support columns may be displaced from the initial position of installation to such an extent that as shown in Fig. 21, the corner fringe 9 at one corner of the panel 2 rides over the corner fringe 9 at the adjacent corner of the neighboring panel 2. Once this happens, the secondary floor as a whole would have a surface step which would constitute an obstruction to people's safe walking.

In addition, considering that the all four side edges of the neighboring panels 2 are held in abutment with each other, the adjoining corner fringes 9 are subjected to rubbing under the influence of vibrations or shocks transmitted from